

I claim:

1. In a process for making paper wherein a furnish is deposited on a wire and dewatered, the improvement comprising:

adding to the furnish a mixture comprising an effective amount of a composition comprising at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally an acrylic acid containing composition.

2. The process of claim 1, wherein the mixture comprises an acrylic acid containing composition.

3. The process of claim 2, wherein the mixture further comprises a crosslinking agent in an amount sufficient to crosslink the acrylic acid containing composition.

4. The process of claim 3, wherein the crosslinking agent comprises an organic compound.

5. The process of claim 3, wherein the crosslinking agent is at least one selected from the group consisting of zinc oxide, ammonium oxide, calcium oxide, calcium stearate, magnesium stearate, aluminum oxide, isostearate, magnesium oxide, stannous oxide, tungsten oxide, sodium tungstate, sodium tungstate dihydrate, titanium oxide, aluminum stearate, zinc octoate, zinc salts of fatty acids, zirconium oxide, calcium isostearate, calcium salts of fatty acids, magnesium salts of fatty acids, and aluminum salts of fatty acids.

6. The process of claim 2, wherein the paper made is selected from the group consisting of Kraft, linerboard and medium.

7. The process of claim 6, further adding a starch containing component to the furnish.

8. The process of claim 1, wherein the furnish comprises a stock, the stock comprising recycled fibers and said recycled fibers contain an acrylic acid containing composition.

9. The process of claim 1, wherein the mixture comprises a polymerizable cationic composition.

10. In a process for making paper, wherein a furnish is deposited on a wire and dewatered to form a paper, and the dewatered paper is subsequently pressed a number of times to further reduce the water content of the paper, the improvement comprising adding a mixture comprising an effective amount of a composition, the composition comprising at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally an acrylic acid containing composition, to at least one side of the dewatered paper subsequent to a first pressing step.

11. The process of claim 10, wherein the composition comprises an acrylic acid containing composition.

12. The process of claim 11, wherein the mixture further comprises a crosslinking agent in an amount effective to crosslink the acrylic acid containing composition.

13. The process of claim 10, wherein the mixture is applied to both sides of the dewatered paper subsequent to a first pressing step.

14. The process of claim 10, wherein the mixture comprises a polymerizable cationic composition.

15. In a process for making paper wherein a furnish is deposited on a wire and dewatered to form a paper, the dewatered paper is subsequently pressed to further reduce the water content of the paper and is subsequently calendered, the improvement comprising introducing to at least one side of the paper a mixture, the mixture comprising an effective amount of a composition, said composition comprising at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally an acrylic acid containing composition, between the pressing and calendering steps.

16. The process of claim 15, wherein the mixture further comprises an acrylic acid containing composition.

17. The process of claim 15, wherein the mixture further comprises a crosslinking agent, in an amount effective to crosslink the acrylic acid containing composition.

18. The process of claim 15, wherein the mixture is introduced to both sides of the paper.

19. The process of claim 15, wherein the mixture comprises a polymerizable cationic composition.

20. A process for making paper comprising the following steps:

- (A) applying a furnish to a wire;
- (B) dewatering the furnish and obtaining a water containing paper;
- (C) pressing the water containing paper to reduce the water content;
- (D) calendering the pressed paper;
- (E) recovering a finished paper; and

(F) adding a coating, comprising an effective amount of at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally an acrylic acid containing composition.

21. The process of claim 20, wherein the coating comprises an acrylic acid containing composition.

22. The process of claim 21, wherein the coating further comprises a crosslinking agent in an amount effective to crosslink the acrylic acid containing composition.

23. The process of claim 21, wherein the coating adding in step (G) further comprises a starch containing composition.

24. The process of claim 20, wherein said coating is added more than once during said paper making process.

25. The process of claim 20, wherein the mixture comprises a polymerizable cationic composition.

26. A composition comprising:
at least one member selected from the group consisting of alkyl ketene dimer and alkylene succinic anhydride;
an acrylic acid containing composition; and
optionally wood fibers.

27. The composition of claim 26, further comprising wood fibers.

28. The composition of claim 26, further comprising a crosslinking agent in an amount sufficient to crosslink the acrylic acid containing composition.

29. The composition of claim 28, wherein the crosslinking agent is at least one selected from the group consisting of zinc oxide, ammonium oxide, calcium oxide, magnesium stearate, isostearate, calcium stearate, stannous oxide, tungsten oxide, titanium oxide, zinc octoate, aluminum stearate, aluminum oxide, zinc salts of fatty acids, zirconium oxide, calcium isostearate, calcium salts of fatty acids, magnesium salts of fatty acids, and aluminum salts of fatty acids.

30. The composition of claim 26, further comprising a starch containing composition.

31. The process of claim 26, wherein the mixture comprises a polymerizable cationic composition.

32. A process of making a coated paper or kraft stock comprising the steps of:
providing a paper or kraft stock;
applying an aqueous resin coating composition as a coating to said paper or stock in an amount in excess of the desired amount of coating;
said aqueous coating composition comprising at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally an acrylic acid containing composition;
metering and removing unwanted coating material from said paper or stock coated with said excess amount of coating material by directing a flow of fluid against said coating;
solidfying the coating on Said paper or stock; and
obtaining a coated paper or kraft stock.

33. The process of claim 31, where the aqueous coating composition further comprises a starch containing composition.

34. The process of claim 31, wherein said aqueous composition comprises an acrylic acid containing composition.

35. The process of claim 33, wherein said aqueous composition further comprises a crosslinking agent in an amount sufficient to crosslink the acrylic acid containing composition.

34. The process of claim 32, wherein the fluid is a directed stream of air.

35. The process of claim 32, wherein the unwanted coating material is recovered and at least some of the recovered material is remixed and applied to said paper or stock.

36. The process of claim 32, wherein the coating comprises a polymerizable cationic composition.

37. In a process for making paper wherein a furnish is deposited on a wire and dewatered, the improvement comprising:

adding to the furnish a mixture comprising an effective amount of a composition comprising at least one member selected from the group consisting of alkyl ketene dimer (AKD) and alkyl succinic anhydride (ASA) and optionally a polymerizable cationic composition.

38. The process of claim 37, wherein the mixture comprises a polymerizable cationic composition.